



**CIVIL GEOTECHNICAL SERVICES**  
**ABN 26 474 013 724**  
**PO Box 678 Croydon Vic 3136**  
**Telephone: 9723 0744 Facsimile: 9723 0799**

18 November 2013

Our Reference: 13323:PJF1892

PEET Ltd  
Level 3 492 St Kilda Road  
MELBOURNE VIC 3004

Dear Sirs,

**RE: LEVEL 1 EARTHWORKS INSPECTION AND TESTING**  
**LIVINGSTON ESTATE (STAGE 3B), CRANBOURNE**

Please find attached our Report No 13323/R001R that relates to the field density testing that was conducted within the filled areas of Stage 3B of the Livingston Estate in Cranbourne. The site stripping and associated filling works were undertaken in early September 2013 and were essentially confined to Lot Nos 353 to 356.

The inspection and testing duties, which were performed by an experienced geotechnician from this office, were undertaken in accordance with the Level 1 guidelines presented in AS 3798 - Guidelines on Earthworks for Commercial and Residential Developments. The testing was performed to the relevant Australian Standards and the accompanying test reports carry NATA endorsement.

The attached compaction results, which were located randomly throughout the depth and breadth of the filled areas associated with the aforementioned allotments, are considered to be representative of the bulk fill materials that were placed across the allotments by Georgiou Pty Ltd (who were contracted to perform the civil works during the aforementioned period).

When interpreting the requirements of AS 2870 - Residential Slabs and Footings (2011), we are of the view that the bulk fill materials that have been placed within the filled allotments by Georgiou during the aforementioned period can be considered as having been placed in a controlled manner to a minimum density ratio of 95% (standard compactive effort).

Please contact the undersigned if you require any additional information.

Yours faithfully,

Civil Geotechnical Services

A handwritten signature in black ink, appearing to read 'Peter Fry', is written over a circular stamp or seal.

Peter Fry



# COMPACTION ASSESSMENT

Job No 13323  
 Report No 13323/R001R  
 Date Issued 16/09/13

## CIVIL GEOTECHNICAL SERVICES

6 - 8 Rose Avenue, Croydon 3136

Client	PEET LIMITED (MELBOURNE)	Tested by	KC
Project	LIVINGSTON ESTATE - STAGE 3B	Date tested	03/09/13
Location	CRANBOURNE	Checked by	JHF

Feature	EARTHWORKS	Layer thickness	200 mm	Time: 10:55
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### Test procedure AS 1289.2.1.1 & 5.8.1

Test No		1	2	3	4	-	-
Location							
	Lot	353	354	355	356		
Approximate depth below FSL		-	-	-	-	-	-
Measurement depth	mm	175	175	175	175	-	-
Field wet density	t/m <sup>3</sup>	2.02	1.94	1.89	1.98	-	-
Field moisture content	%	31.7	34.5	37.2	29.7	-	-

### Test procedure AS 1289.5.7.1

Test No		1	2	3	4	-	-
Compactive effort		Standard					
Oversize rock retained on sieve	mm	19.0	19.0	19.0	19.0	-	-
Percent of oversize material	wet	0	0	0	0	-	-
Peak Converted Wet Density	t/m <sup>3</sup>	1.98	1.89	1.85	1.96	-	-
Adjusted Peak Converted Wet Density	t/m <sup>3</sup>	-	-	-	-	-	-
Optimum Moisture Content	%	26.5	30.0	33.0	27.0	-	-

Moisture Variation From Optimum Moisture Content	5.0% wet	4.5% wet	4.0% wet	2.5% wet	-	-
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Density Ratio ( R <sub>HD</sub> )	%	102.0	102.5	102.0	101.0	-	-
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### Material description

No 1 - 4 Clay Fill
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The results of the tests, calibrations and/or measurements included in this document are traceable to Australian/National standards. Accredited for compliance to ISO/IEC 17025 Accreditation No 9909

Approved Signatory : Justin Fry